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LISTING OF CLAIMS:

Agent for Applicant requests that the following amendments be made to the claims without adding any new subject matter. The additions thereto are underlined, while the deletions therefrom are contained in double square brackets.

1.   (Canceled)

2.   (Canceled)

3.   (Canceled)

4.   (Canceled)

5.   (Canceled)

6.   (Canceled)

7.   (Canceled)

8.   (Canceled)

9.   (Canceled)

10.   (Canceled)

11.   (Canceled)

12.   (Canceled)

13.   (Canceled)

14.   (Canceled)

15.   (Canceled)

16.   (Canceled)

17.   (Canceled)

18.   (Canceled)

19. (New) A method of improving the performance of an Internet network, the Internet network including a plurality of communication lines X, Y, Z, and N, such communication lines being linked so as to permit bandwidth sharing between more than one customer, the method comprising the step of:

selectively associating communication line X with one or more of communication lines Y, Z, or N, such selective association being based on associating particular communication lines between which the effects of crosstalk are relatively small, thereby improving the performance of Internet network access made available to a customer associated with communication line X.

20. (New) The method of claim 19, whereby the Internet network is operable to provide Digital Subscriber Line (DSL) service to one or more of communication lines X and/or communication lines Y, Z, and N independently of the communication lines assigned for the Plain Old Telephone Service (POTS) to the customers associated with the communication lines.

21. (New) The method claimed in claim 20, whereby the performance of the DSL service is improved by reducing the effect of crosstalk noise affecting the one or more communication lines assigned to the DSL service, and by increasing the signal to noise ratio of the DSL service.

22. (New) The method of claim 20, comprising the further step of optimizing the allocation of the communication lines for DSL service provided to a plurality of customers by minimizing the weighted sum of the energy of the crosstalk between the communication lines and the associated plurality of customers.

23. (New) The method of claim 22, comprising the further step of determining a subset of communication lines and associated customers and then optimizing the allocation of communication lines for DSL service between such subset of communication lines.

24.   (New)   The method of claim 19, comprising the further step of initiating a measurement procedure for detecting communication lines with relatively small crosstalk interaction therebetween, by utilizing a measurement device such as a spectrum analyzer.

25.   (New)   The method of claim 24, whereby the measurement procedure is implemented using one or more bridge taps linked to the communication lines.

26.   (New)   The method of claim 22, whereby the optimizing of the allocation of the communication lines for DSL service is achieved by applying a weighting matrix to prioritize different DSL customers.

27.   (New)   The method of claim 19, whereby one of the communication lines can be assigned to more than two customers if a particular one of the communication lines is known to have a relatively small crosstalk interaction with other communication lines associated with the particular one of the communication lines at a particular bridge tap location.

28.   (New)   The method of claim 19, comprising the further step of associating filter devices (low-pass, band-pass and high-pass devices) with each communication line being shared so that only a specific frequency band is carried on the communication line for a particular customer thereby providing secure signal transmission.

29.   (New)   The method of claim 22, whereby optimizing of the allocation of communication lines for DSL service is used to minimize the effects of near end crosstalk (NEXT) and/or far end crosstalk (FEXT) of the communication lines.

30.   (New)   A system for improving the performance of an Internet network that includes a plurality of communication lines X, Y, Z, and N, such communication lines being linked so as to permit bandwidth sharing between more than one customer, the system comprising:

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a bridge tap means linked to the plurality of communication lines X, Y, Z, and N, the bridge tap means being operable to permit communication line X to be selectively associated with one or more of communication lines Y, Z, or N by associating particular communication lines between which the effects of crosstalk are relatively small, wherein the bridge tap means is operable based on such selective association to improve the performance of the Internet access made available via communication line X.

31. (New)   The system as claimed in claim 30, the system further comprising at least one filter device (low-pass, band-pass or high-pass filter devices) linked to each communication line being shared so that only a specific frequency band is carried on the communication line for a particular customer thereby providing secure signal transmission.

32. (New)   An Internet network including a plurality of communication lines X, Y, Z, and N, the Internet network comprising:

(a)   a bridge tap means linked to the plurality of communication lines X, Y, Z, and N, the bridge tap means being operable to permit communication line X to be selectively associated with one or more of communication lines Y, Z, or N, by selectively associating particular communication lines between which the effects of crosstalk are relatively small, wherein the bridge tap means is operable based on such selective association to improve the performance of the Internet access made available via communication line X; and

(b)   at least one filter device (low-pass, band-pass or high-pass filter devices) linked to each communication line being shared so that only a specific frequency band is carried on the communication line for a particular customer thereby providing secure signal transmission